abcam

ab225

Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker

Lab Essentials

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	MRC OX-7
Purification technique	Affinity purification
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC

Tested

Species	Rat
Dilution info	1 µg/mL

Notes	-

Predicted

Species	Mouse, Rabbit, Horse, Guinea pig
Dilution info	-
Notes	-

WB

Tested

Species	Rat
Dilution info	5 µg/mL
Notes	Observed molecular weight may vary depending on the glycosylation level of the target.

Predicted

Species	Mouse, Rabbit, Horse, Guinea pig
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Rat
Dilution info	0.1 µg for 10^1-10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rabbit, Horse, Guinea pig
Dilution info	-
Notes	-

Target data

See full target information Thy1

Function	May play a role in cell-cell or cell-ligand interactions during synaptogenesis and other events in the brain.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

The affinity of the Fab' of MRC OX-7 for rat Thy-1 is 3 x $10^{9}m^{-1}$ and for mouse Thy-1.1 is 3 x $10^{8}m^{-1}$.
Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CD90 also known as Thy1 is a glycoprotein with a molecular mass of approximately 25-37 kDa. It is highly conserved across species and found on the surface of various cell types including fibroblasts neurons and endothelial cells. CD90 is expressed in these cells in tissues such as the brain thymus and lungs. Researchers use anti-CD90 antibodies for detection often in combination with CD90 FITC in immunofluorescence assays. CD90 serves as a useful cell marker particularly in identifying mesenchymal stem cells (MSCs).
Biological function summary	CD90 plays a role in cell-cell and cell-matrix interactions contributing to cellular adhesion migration and signal transduction. It functions as part of a complex

	involving integrins which mediate its interaction with the extracellular matrix. This protein also influences T-cell activation reflecting its importance in immune response regulation. Its presence aids in modulating response to injury and promoting tissue repair due to its association with stem and progenitor cells.
Pathways	CD90 engagement affects focal adhesion and MAPK signaling pathways. It interacts with integrins like αvβ3 and α5β1 influencing cell movement and proliferation processes. CD90 involvement in these pathways allows it to regulate responses important for cell survival and communication within various tissues. These interactions highlight the protein's role in maintaining cellular homeostasis and regulating physiological processes.
Associated diseases and disorders	CD90 has associations with fibrosis and cancer. In fibrotic conditions CD90 expression affects fibroblast activity influencing tissue scarring in organs such as the liver and lungs. In cancer CD90 modifies tumor progression and metastasis by impacting cell adhesion and migration with connections to proteins like TGF-beta which further drive these processes. Understanding CD90 in disease contexts facilitates the development of therapeutic strategies aimed at modulating its activity.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

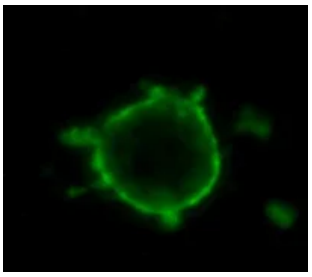
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

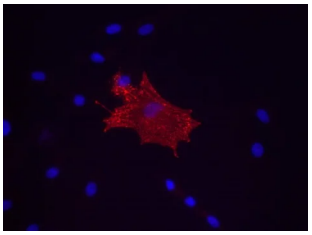
6 product images



Immunocytochemistry - Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker (ab225)

CD90 / Thy1 Immunocytochemistry staining using mouse Anti-CD90 / Thy1 antibody

This image was kindly supplied as part of the review submitted by Nick Voilley. Rat retinal ganglion cell labelled with ab225 as a primary antibody and an anti-mouse F(ab)' 2 coupled to Alexa488 as a secondary antibody. The cell is approximately 15 micrometers in diameter. Only the cells labelled in green in the culture bear action potentials when stimulated. These three elements (reactivity to ab225, size and elecrophysiological parameters) clearly indicate the cell is a ganglion cell.

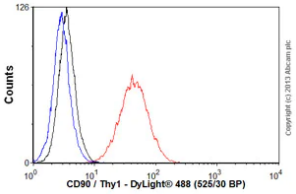


This image is courtesy of an anonymous customer review.

Immunocytochemistry - Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker (ab225)

CD90 / Thy1 Immunocytochemistry staining using mouse Anti-CD90 / Thy1 antibody

Immunocytochemistry/ Immunofluorescence analysis of rat sciatic nerve schwann cells and fibroblasts labeling CD90 / Thy1 with ab225 at 1/400 dilution. Cells were fixed in paraformaldehyde and permeabilized with 0.5% Triton X-100. The cells were blocked with 5% serum for 1 hour at 21°C, followed by staining with ab225 at 1/400 in 0.2% BSA for 1 hour at 37°C. A polyclonal goat anti-mouse Alexa Fluor® 546 secondary antibody was used at 1/500 dilution.



Flow Cytometry (Intracellular) - Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker (ab225)

CD90 / Thy1 Flow Cytometry (Intracellular) staining using mouse Anti-CD90 / Thy1 antibody

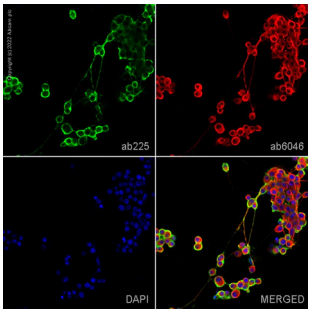
Overlay histogram showing PC12 cells stained with ab225 (red line).
The cells were fixed with 4% paraformaldehyde (10 min) and incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab225, 0.1µg/1x10^6 cells) for 30 min at 22°C.

The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) ab96879 at 1/500 dilution for 30 min at 22°C.

Isotype control antibody (black line, mouse IgG1 [B11/6], ab91353, 1µg/1x10^6 cells) used under the same conditions.

Unlabelled sample (blue line). Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.

ab225 gave a positive result in 80% methanol (5 min) fixed PC12 cells used under the same conditions.

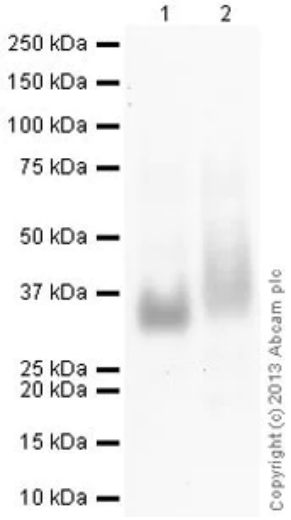


Immunocytochemistry - Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker (ab225)

CD90 / Thy1 Immunocytochemistry staining using mouse Anti-CD90 / Thy1 antibody

ab225 staining CD90 / Thy1 in NGF-differentiated PC-12 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated

overnight at 4°C with ab225 at 1µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control. Cells were then incubated with ab150121, Goat polyclonal Secondary Antibody to Mouse IgM - mu chain (Alexa Fluor® 488) at 1/1000 dilution (shown in green) and ab150080, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was acquired with a confocal microscope (Leica-Microsystems TCS SP8) and a single confocal section is shown.



Western blot - Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker (ab225)

Rat CD90/Thy1 is N-glycosylated at three sites, giving rise to molecules with a range of molecular masses (25-37 kDa).
All lanes:
Western blot - Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker (ab225) at 5 µg/mL

Lane 1:
Brain (Rat) Tissue Lysate at 20 µg

Lane 2:
PC12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/10000 dilution

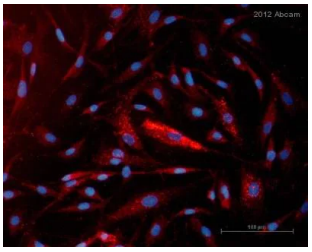
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 17 kDa

Observed band size: 35-37 kDa

Exposure time: 20min



This image is courtesy of a customer review submitted by Vega Villar, University of Leon.

Immunocytochemistry - Anti-CD90 / Thy1 antibody [MRC OX-7] - Hematopoietic Stem Cell Marker (ab225)

CD90 / Thy1 Immunocytochemistry staining using mouse Anti-CD90 / Thy1 antibody

Immunocytochemistry/ Immunofluorescence analysis of horse adipose and bone marrow stem cells labeling CD90 / Thy1 with ab225 at 1/1000 dilution. Cells were fixed in paraformaldehyde and permeabilized with Triton x100 0.1%. The cells were blocked with 10% BSA for 30 minutes at 37°C, followed by staining with ab225 at 1/1000 for 12 hours in PBS+IGEPAL+BSA+10%NGS at 4°C. Goat F(ab')2 Anti-Mouse IgG - (Fab')2 (Biotin), pre-adsorbed (ab5886) was used as the secondary antibody at 1/400 dilution.

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